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10/733,393

12/12/2003

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ALC 3109

8508

7590 10/22/2007  
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EXAMINER
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ANWARI, MACEEH

ART UNIT	PAPER NUMBER
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2144

MAIL DATE	DELIVERY MODE
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10/22/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/733,393

Applicant(s)

GUINGO ET AL.

Examiner

Maceeh Anwari

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on 05 June 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 4/05/2007.
- 4) ☒ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

1. The examiner has withdrawn the Final action mailed out to applicant on 9/13/2007. This supplemental action is responsive to the amendments filed on 12/12/2003. Claims 1, 3, 8-10, 14, 15, 19, 21 and 22 were amended and claim 2 was cancelled. No other claims have been amended, canceled, or newly presented. Accordingly, claims 1 & 3-26 are pending.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 10 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 10 fails to comply with the enablement requirement because the applicant does not mention the methodology behind how the: "collecting aggregated flow records is performed in parallel." Further the applicant fails to mention what a "parallel collection of flow table data" is.

***Claim Rejections - 35 USC § 101***

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

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Claims 22-26 are rejected under 35 U.S.C. 101 because The claims lack the necessary physical articles or objects to constitute a machine or a manufacture within the meaning of 35 USC 101. They are clearly not a series of steps or acts to be a process nor are they a combination of chemical compounds to be a composition of matter. As such, they fail to fall within a statutory category. They are, at best, functional descriptive material *per se*.

Descriptive material can be characterized as either "functional descriptive material" or "non-functional descriptive material." Both types of "descriptive material" are non-statutory when claimed as descriptive material *per se*, 33 F.3d at 1360, 31 USPQ2d at 1759. When functional descriptive material is recorded on some computer-readable medium, it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare *In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994)

Merely claiming non-functional descriptive material, i.e., abstract ideas, stored on a computer-readable medium, in a computer, or on an electromagnetic carrier signal, does not make it statutory. See *Diehr*, 450 U.S. at 185-86, 209 USPQ at 8 (noting that the claims for an algorithm in *Benson* were unpatentable as abstract ideas because "[t]he sole practical application of the algorithm was in connection with the programming of a general purpose computer.").

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 19-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Klinker et al. (hereinafter Klinker) US Publication NO.: 2002/0145981 A1.

Klinker teaches:

**Claim 19:** (Currently Amended) A method of measuring per-flow traffic delay between two routers having synchronized clocks, comprising the steps of: a) calculating, at each of the routers, a key uniquely and invariantly identifying identifying a corresponding packet in the flow (Figures 1C-2 & 4B-6 & 15-19 and Par 10 & 15 & 53 & 70; trace route, analyzing packet information, standard routing protocols and because the header of IP packets are used to identify a corresponding packet in the flow); b) selecting, at each of the routers using the key, a packet to be monitored (Figures 1C-2 & 4B-6 & 15-19 and Par 10 & 15; trace route, and analyzing packet information); c) recording, at each of the routers, a timestamp upon selection of each packet (Figures 3 & 7 and Par. 64-65 & 89; round trip time, network latency and server response time); and d) subtracting the timestamps to determine the delay for the packet (Figures

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3 & 7 and Par. 64-65 & 89; round trip time, network latency and server response time).

**Claim 20:** (Original) wherein multiple packets are monitored and an average delay for the multiple packets is calculated (Figures 3 & 7 & 9 and Par. 64-65 & 89; round trip time, path optimization, traffic analysis).

**Claim 21:** (Currently Amended) wherein if a key ~~can not~~ cannot be calculated within a given time interval indicating lost packets the calculating step is stopped (Par. 70; time to live (TTL)).

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 22-26 are rejected under 35 U.S.C. 102(e) as being anticipated by

Kanekar et al. (hereinafter Kanekar), Patent NO.: US 6751191 B1.

Claim 22:

A system for measuring per-flow traffic delay between two routers having synchronized clocks (Figure 11A-11B & 12A & Col. 10 lines 54-65), comprising: means for calculating, at each of the routers, a key for every packet in the flow, wherein the key uniquely and invariantly identifies a corresponding packet in the flow (Figure 11B & Col. 3 lines 34-49 & Col. 13 lines 37-41; packet headers); means for selecting, at each of the routers using the key, a packet to be monitored (Col 3 lines 34-49 & Col.

13 lines 37-41; packet headers within IP networks); means for recording, at each of the routers, a timestamp upon selection of each packet (Figure 12C & 13A-B & Col 3 lines 34-49 & Col. 13 lines 37-41; packet headers and time to live (TTL)); and means for subtracting the timestamps to determine the delay for the packet (Col. 10 lines 54-65 & Col. 13 lines 22-26; forwarding delay time, synchronizing tasks and synchronized state information).

Claim 23:

The system as defined in claim 22 wherein the routers are edge routers in a virtual router network (Figures 1-3 and Col. 1 lines 10-12).

Claim 24:

The system as defined in claim 23 wherein one of said edge routers is selected as a master edge router and packet filtering information is aggregated and correlated at said master edge router (Figure 13A-13B and Col. 13 lines 37-41 & Col. 14 lines 30-59 & Col. 2 lines, 25-48 & Col. 8, lines 15-40; forwarding engine tables, shared IP and Mac addresses).

Claim 25:

The system as defined in claim 23 wherein one of said edge routers is selected as a master edge router and the aggregation and correlation processes of packet filtering information are distributed among the edge routers, the results being sent and compiled at said master edge router (Figure 13A-13B & Col. 14 lines 30-59 & Col. 2 lines, 25-48 & Col. 8, lines

15-40; forwarding engine tables, shared IP and Mac addresses and master active).

Claim 26:

The system as defined in claim 24 having a service manager to receive said packet filtering information (Col. 2, lines 25-48, where the default gateway reads on the limitation of a service manager).

**Examiner Note: Examiner has cited particular columns and line numbers in the references as applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in its entirety as potentially teaching of all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the examiner**

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1, 3-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanekar et al. (hereinafter Kanekar), Patent NO.: US 6751191 B1; and further in view of Klinker et al. (hereinafter Klinker), U.S. Publication No.: 2002/0145981 A1.

Kanekar teaches a) configuring said virtual interfaces with a respective real-time flow measurement meter, said respective real-time flow measurement meter having a uniform behavior with respect to a real-time flow measurement, (Figure 13A- 13B and



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Col. 14 lines 14- 40; layer tables, actively forwarding incoming and outgoing packets and forwarding engine tables) b) determining, at said virtual interfaces and in dependence upon a flow monitoring rule set consistent for all of said virtual interfaces, whether a packet belongs to a flow to be monitored; (Figure 13A- 13B and Col. 14 lines 14- 40; layer tables, actively forwarding incoming and outgoing packets and forwarding engine tables) c) accounting, responsive to the packet belonging to a flow to be monitored, the packet in a flow record corresponding to that flow maintained by said respective real-time flow measurement meter; (Figure 13A- 13B and Col. 14 lines 14- 40; layer tables, actively forwarding incoming and outgoing packets and forwarding engine tables).

**Regarding claim 1:**

Kanekar also teaches aggregating the flow records from all virtual interfaces at a master virtual interface for transmission to a collector (Figure 13A- 13B and Col. 14 lines 14- 40; layer tables, actively forwarding incoming and outgoing packets and forwarding engine tables).

Kanekar does not appear to explicitly disclose identifying if a specified flow record abides to terms of a corresponding, service level agreement pertaining to said specified flow record.

However, Klinker discloses maintaining and monitoring a traffic service level for data communicated by a computer network; from source to destination. (Figure 2 and Abstract)

Kanekar and Klinker are analogous art because they are from the same field of endeavor of forwarding and monitoring traffic flow within a network.

At the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teachings of Kanekar and Klinker before him or her, to incorporate aggregating the flow records from all virtual interfaces at a master virtual interface for transmission to a collector, as disclosed by Kanekar, with maintaining and monitoring a traffic service level for data communicated by a computer network, as disclosed by Klinker.

The motivation for doing so would have been to allow the use of monitoring traffic within a given network and comparing actual flow of traffic to standards set by a service level agreement; to provide a more cost efficient way for utilizing the network.

Therefore, it would have been obvious to combine Kanekar with Klinker to obtain the invention as specified in the instant claim.

Kanekar and Klinker teach the invention as described above, and furthermore regarding **claim 3** Kanekar teaches an initial step of selecting one of the virtual interfaces as the master virtual interface (Figures 3 & 5 & 9 11A- 12D and Col. 8 Lines 15-40; determining which is master and slave).

Kanekar and Klinker teach the invention as described above, and furthermore regarding **claim 4** Kanekar teaches, wherein the step of selecting the master virtual interface is done by polling each of the virtual interfaces to determine which one best satisfies a selection criteria (Col. 8 lines 15-40; the polling is conducting inherently

because it is mentioned in lines 26-31 that the first router to come up will have the greater capacity for handling incoming and outgoing packets).

Kanekar and Klinker teach the invention as described above, and furthermore regarding **claim 5** Kanekar teaches, wherein the selection criteria includes CPU usage, traffic handling capability and memory capacity (Col. 8 lines 26-31; reads on the three limiting features above because all three feature will determine inherently the router with the greater capacity for incoming and outgoing packets).

Kanekar and Klinker teach the invention as described above, and furthermore regarding **claim 6** Kanekar teaches, following the selecting step, initiating, by the master virtual interface, distribution of the rule set to the other virtual interfaces (Col. 2 lines 27-48 & Col. 8 lines 15-40; utilization of Internet Protocol (IP)).

Kanekar and Klinker teach the invention as described above, and furthermore regarding **claim 7** Kanekar teaches, following the selection step, by the master virtual interfaces, collecting aggregated flow records from the other virtual interfaces (Figures 9 & 13A-B and Col. 8 lines 15-40; spanning tree databases, forwarding engine tables).

Kanekar and Klinker teach the invention as described above, and furthermore regarding **claim 8** Kanekar teaches, wherein the aggregated flow records are sent to the collector by the master virtual interface (Col. 8, lines 15-18; master active slave functions on standby).

Kanekar and Klinker teach the invention as described above, and furthermore regarding **claim 9** Kanekar teaches, wherein collecting aggregated flow records is

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performed serially (Figures 9 & 13A-B and Col. 8 lines 15-40; spanning tree databases, forwarding engine tables).

Kanekar and Klinker teach the invention as described above, and furthermore regarding **claim 10** Kanekar teaches, wherein collecting aggregated flow records is performed in parallel (Figures 9 & 13A-B and Col. 8 lines 15-40; spanning tree databases, forwarding engine tables).

Kanekar and Klinker teach the invention as described above, and furthermore regarding **claim 11** Kanekar teaches, wherein the aggregated flow records are provided to the collector using either a push or a pull collector operation (Col. 8, lines 15-40; reads on this limitation because all actions fall under either a push or pull operation).

Kanekar and Klinker teach the invention as described above, and furthermore regarding **claim 12** Kanekar teaches, wherein a service manager initiates the triggering selection process by sending a new or updated rule set to the master (Col. 2 lines 25-48 and Col. 8 lines 15-40; utilization of Internet Protocol (IP), default gateway and master active slave functions on standby).

Kanekar and Klinker teach the invention as described above, and furthermore regarding **claim 13** Kanekar teaches, wherein the service manager receives aggregated flow records from the collector (Figure 13A-13B and Col. 2 lines 25-48 & Col. 8 lines 15-40 & Col. 14 lines 30-59; spanning tree databases, forwarding engine tables and the default gateway).

Kanekar and Klinker teach the invention as described above, and furthermore regarding **claim 14** Kanekar teaches, means for configuring said virtual interfaces with a

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respective real-time flow measurement meter, said respective real-time flow measurement meter having a uniform behavior with respect to a real-time flow measurement (Figure 13A- 13B and Col. 14 lines 14- 40; layer tables, actively forwarding incoming and outgoing packets and forwarding engine tables); means at said virtual interface for determining in dependence upon a flow monitoring rule set consistent for all of said virtual interfaces, whether a packet belongs to a flow to be monitored (Figure 13A- 13B and Col. 14 lines 14- 40; layer tables, actively forwarding incoming and outgoing packets and forwarding engine tables); means for accounting, responsive to the packet belonging to a flow to be monitored, the packet in a flow record corresponding to that flow maintained by said respective real-time flow measurement meter (Figure 13A- 13B and Col. 14 lines 14- 40; layer tables, actively forwarding incoming and outgoing packets and forwarding engine tables); and means for aggregating the flow records from all virtual interfaces at a master virtual interface for transmission to a collector (Figure 13A- 13B and Col. 14 lines 14- 40; layer tables, actively forwarding incoming and outgoing packets and forwarding engine tables).

Kanekar and Klinker teach the invention as described above, and furthermore regarding **claim 15** Kanekar teaches, wherein one of said virtual interfaces is selected as the master virtual interface (Figures 3 & 5 & 9 11A- 12D and Col. 8 Lines 15-40; determining which is master and slave).

Kanekar and Klinker teach the invention as described above, and furthermore regarding **claim 16** Kanekar teaches, wherein the master virtual interface has means to

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distribute rule sets to other virtual interfaces (Col. 2 lines 27-48 & Col. 8 lines 15-40; utilization of Internet Protocol (IP)).

Kanekar and Klinker teach the invention as described above, and furthermore regarding **claim 17** Kanekar teaches, wherein the master virtual interface has means to collect aggregated flow records from the other virtual interfaces and to report the aggregated flow records to a collector (Figures 9 & 13A-B and Col. 8 lines 15-40 Col. 8 lines 15-18; spanning tree databases, forwarding engine tables and master active slave functions on standby).

Kanekar and Klinker teach the invention as described above, and furthermore regarding **claim 18** Kanekar teaches, having a service manager to initiate a Selection of the master virtual interface and to collect aggregated flow records from the collector (Figure 13A-13B and Col. 2 lines 25-48 & Col. 8 lines 15-40 & Col. 14 lines 30-59; spanning tree databases, forwarding engine tables, default gateway, utilization of Internet Protocol (IP), and master active slave functions on standby).

**Examiner Note: Examiner has cited particular columns and line numbers in the references as applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in its entirety as potentially teaching of all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the examiner**

### ***Response to Arguments***

10. Applicant's arguments filed have been fully considered but are not persuasive. In substance, the applicant argues: A) that the subject matter recited in the currently amended claims 9 and 10 is described in the specification in such a way to enable one

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skilled in the art to which it pertains, to make and/or use the subject matter recited therein; B) that Kanekar does not disclose aggregating as recited in the rejected claims 1 and 14, from which claims 2-11 and 15-18 depend; C) Kanekar does not disclose determining the delay as recited in the rejected claim(s) 22, from which claims 23-26 depend; D) Klinker does not disclose determining the delay as recited in the rejected claims 19 and 22, from which claims 20, 21, and 23 depend.

11. In response to A), examiner respectfully disagrees. The subject matter recited in the currently amended claims 9 and 10 is not described in the specification in such a way to enable one skilled in the art to which it pertains, to make and/or use the subject matter recited therein. What is distinguishes a collecting of flow records in parallel from that collected "serially"?

12. In response to B), examiner respectfully disagrees. Kanekar does disclose aggregating as recited in, the currently amended, claims 1 & 14 and their respective dependents. The newly revised office action has this limitation clearly and specifically meet (Figure 13A- 13B and Col. 14 lines 14- 40; layer tables, actively forwarding incoming and outgoing packets and forwarding engine tables). For further clarification refer to the respective claim(s) above.

13. In response to C), examiner respectfully disagrees. Kanekar discloses forwarding delay times, and eliminating delay in case if the master fails and the slave has to forward information. See rejection above for further clarification.

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14. In response to D), examiner respectfully disagrees. Klinker discloses round trip time, network latency (NL), server response time and time to live (TTL) which deal with determining delay.

15. Applicant has had an opportunity to amend the claimed subject matter, and has failed to modify the claim language to distinguish over the prior art of record by clarifying or substantially narrowing the claim language. Thus, Applicant apparently intends that a broad interpretation be given to the claims and the Examiner has adopted such in the present and previous Office action rejections. See *In re Prater and Wei*, 162 USPQ 541 (CCPA 1969), and MPEP 2111.

16. Applicant employs broad language, which includes the use of word, and phrases, which have broad meanings in the art. In addition, Applicant has not argued any narrower interpretation of the claim language, nor amended the claims significantly enough to construe a narrower meaning to the limitations. As the claims breadth allows multiple interpretations and meanings, which are broader than Applicant's disclosure, the Examiner is forced to interpret the claim limitations as broadly and as reasonably possible, in determining patentability of the disclosed invention. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir.1993).

17. Failure for Applicant to significantly narrow definition/scope of the claims and supply arguments commensurate in scope with the claims implies the Applicant intends broad interpretation be given to the claims. The Examiner has interpreted the claims



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with scope parallel to the Applicant in the response, and reiterates the need for the Applicant to more clearly and distinctly defines the claimed invention.

***Conclusion***

18. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

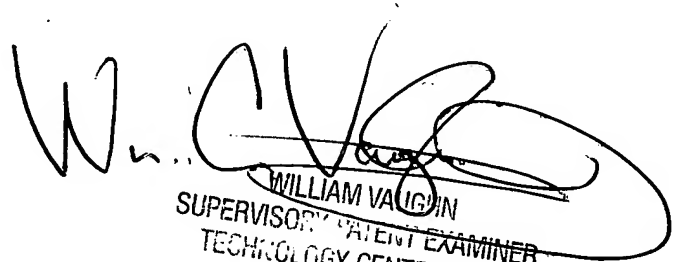
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maceeh Anwari whose telephone number is 571-272-7591. The examiner can normally be reached on Monday-Friday 7:30-5:00 PM ES.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Vaughn can be reached on 571-272-3922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

M.A.

  
WILLIAM VAUGHN  
SUPERVISOR, PATENT EXAMINER  
TECHNOLOGY CENTER 2100